"How Old is that Rock?"

LAB CRAWL 2008 HALF-LIFE ACTIVITY #3

Summer 2008

"How Old is that Rock?": Half-Life Activity #3

Universal symbol for "radioactive"

This is the 3rd activity of the half-life series. Students should be encouraged, at every stage of this activity, to refer back to the previous 2 activities (M&M and sample rock bags) as a source of prior knowledge.

Playing the field geologist, students will be breaking open plaster rocks that have been pre-made to contain set ratios of white and orange pellets.

As you circulate during the activity, stress careful data collection over quickly finishing the activity. Errors in rock identification can cause serious confusion when it comes time to peer review results.

As an extension to this activity's conclusion, student groups could brainstorm a list of additional activities that could be performed by a class several years below their own grade level. How well they design their follow-up activity demonstrated how completely they understand the relationship between half-lives and age.

MATERIALS

- PRE-MADE PLASTER ROCKS
- RUBBER MALLETS
- WORKSHEETS

Activity Directions

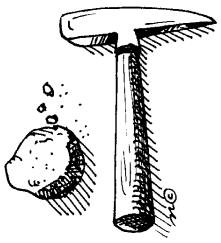
This is where the fun begins...it can get messy, so plan that out ahead of time (tablecloths, outside time, etc.)

Have students break their rocks apart, collecting ALL 16 beads within each rock. Before moving on to the next rock, students are to put the beads into a labeled plastic bag.

When all beads have been collected and catalogued, students are to fill out their data table completely.

Each rock will have the following information determined: # of half lives experienced and absolute age (formula is written on the data sheet)

Results will be peer reviewed at end of activity.



Teacher notes:

a) Rock "receipe":

-1/2 sand; 1/2 plaster

-follow package directions for water amounts

b) Rocks should contain the same ratio of beads as the bags from activity #2 "Youngest to Oldest"

c) make sure that rocks are labeled accurately before they are broken

S.S.S. Science Addressed:

SC.A.1.3
2.3

SC.D.1.3
2.3

SC.E.1.3

SC.G.1.3

SC.H.1.3
2.3
3.3

Plaster Rock Activity

Mystery Element has a HALF LIFE = 10 MILLION YEARS

FORMULA AGE = (# of half lives) X (element's half life)

Sample Order (from least amount of decay to the most amount of decay)	# of HALF LIVES	AGE

Did your AGES pass PEER REVIEW?

Extension Activity: Completely describe, including materials, the activity designed by your group:

Grade level to be taught:_____ Materials: - -
- -
- -

Directions:

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